

# ***Cymolomia hartigiana* (Saxesen, 1840) (Lepidoptera: Tortricidae) attacking to *Abies nephrolepis* Max. New to Daxing'anling, Heilongjiang, China**

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**Abstract:** An Olethreutine species *Cymolomia hartigiana* (Saxesen, 1840), attacking to *Abies nephrolepis* Max., is reported for the first time from Daxing'anling, Heilongjiang, China. The morphological characteristics are briefly re-described with illustrations. Also its damage and biology are noted.

**Key words:** Systematics, Lepidoptera, Tortricidae, *Cymolomia*, Daxing'anling, China.

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## **Introduction**

Genus *Cymolomia* Lederer is a monotypic genus in the tribe Olethreutini, belonging to the family Tortricidae. They often cause serious damage to *Abies nephrolepis* Max. Larvae usually tie a bundle of needles at branch tip and feed within it. When its damage severe, most damaged branches are wither to die around late June. This species was discovered for the first time to occur in Jiagedaqi city in June of 2002, attacking *Abies nephrolepis* Max. During late spring to summer, we surveyed its damage along the street and main parks in the city. Most host trees were seriously damaged by the species as shown in Fig. 1. Life history of the species was investigated with damaged branches, which were collected from field. Adults mostly emerged on Mid-July. We examined the specimens and identified as *Cymolomia hartigiana* (Saxesen), which is reported for the first time from Daxing'anling area. In the present study, the morphology and biology of the species are briefly summarized with illustrations of male and female genitalia. All the specimens examined are now preserved in the entomological collection, Northeast Forestry University, Harbin, China.

## **Morphology and taxonomy**

In this study, the authors examined the specimens, which were obtained from the damaged branches of *Abies nephrolepis* Max. and briefly re-described with notes on its

damage and biology to provide an information in field monitoring. Also the external characters are noted and illustrated.

### ***Cymolomia* Lederer, 1859**

Type species: *Phalaena hartigiana* Saxesen, 1840

### ***Cymolomia hartigiana* (Saxesen, 1840)**

*Sciaphila hartigiana* Saxesen, 1840, in Ratzeburg, Die Forst-Insekten, 2: 230, pl. 12: 11. Die Forst-Insekten 2: 230 (*Sciaphila*). Type Locality: Europe (Germany).

*Cymolomia hartigiana*: Liu & Bai, 1974, Acta Entomol. Sinica, 17(2): 169; Liu & Bai, 1977, Econ. Ins. Faun. China, 11: 70; Liu, 1983, Icon. Heter. Sin., 1: 41; Liu & Li, 2002, Fauna Sinica, (Insecta) 27: 278.

**Adult** (Fig. 4). Wingspan 12-16 mm in both sexes. Antennae blackish brown, milky grayish yellow at base, rather short reaching to middle of costa in forewing. Head covered with appressed scales, rather roughly erected scales on collar. Labial palpus slightly upturned; 2nd segment fairly broadened, mixed with creamy white scales dorsally; 3rd segment small, blackish brown. Thorax and abdomen blackish brown; legs blackish fuscous, with yellowish brown band on segment. Forewing with a bundle of long scales on base of costa ventrally; ground color of forewing blackish brown, mixed with brownish fuscous, tinged with reddish brown at each margin of band, brownish yellow scales scattered on middle near cell. Hindwing blackish-brown, cilia rather pale.

**Male genitalia** (Fig. 5). Tegumen moderate, somewhat semi-circle in outline. Uncus rather short, bifurcated with numerous long hairs around it. Socius broad, large with numerous long hairs along ventral and lateral margin. Valva with numerous long spines along ventral margin basally; curved inwardly before middle of costa, then expanded toward apex. Juxta moderate, band-shaped.

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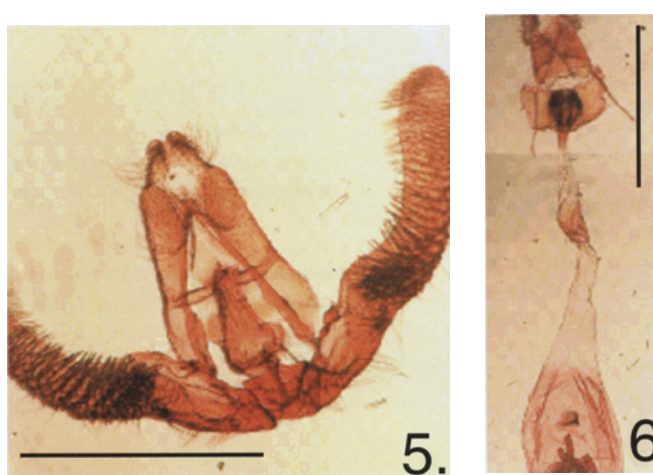
Aedeagus short, stout, rather narrower toward apex.

**Female genitalia** (Fig. 6). Papillae analis moderate. Apophyses posterioris nearly same length of apophyses anterioris. Ostium bursae well sclerotized at entrance.

Ductus bursae fairly long, twisted at middle, rather broader near corpus bursae. Corpus bursae semi-ovate, with small signum on middle.



**Figs. 1-4:** 1. Damaged tree, 2. Magnification of branch tip of *Abies nephrolepis* Max. infested by *Cymolomia hartigiana* (Saxesen), 3. Dead branch, 4. Adult emerged from the damaged branches



**Figs. 5-6:** Genitalia of *Cymolomia hartigiana* (Saxesen)  
5. Male; 6. Female <scale bars: 1 mm>

**Larva:** Average length 15-18 mm. Head light yellowish-brown with rather blackish at behind head and around ocelli. Thorax light yellowish-white or light yellowish-green, narrow. Pronotum light yellow. Proleg brown.

**Pupa.** Body and compound eyes blackish brown. 9mm in length and 1.9 mm in width.

**Material examined.** 8♂, 4♀, Jiagedaqi, Heilongjiang, Mid. July 2002 (BK Byun & CD Li)-coll. Ent. Div., NEFU.

**Distribution.** China: Heilongjiang (Dailing, Jiagedaqi); Jilin (Mt. Changbaishan); Hebei (Saihanba Forest Farm), Korea (S), Japan, Russia (Amur, Siberia), and Europe. In this study, the species is reported for the first time from Daxing'anling area.

**Host plants.** *Abies nephrolepis* Max., *Picea jezoensis* Carr. have been known from China (Liu 1983; Liu & Li 2002). *Picea koraiensis* S. and *Larix* sp. from Korea (Park, 1983b). *Abies sachalinensis* Fr. Schm., *Picea* sp., *Pinus sylvestris* L., *Tsuga sieboldii* Carr. (Pinaceae) were known from Japan (Suzuki & Komai 1984).

**Damage and Biological note.** According to previous reports (Liu 1983; Liu & Li 2002), *Cymolomia hartigiana* (Saxesen, 1840) has one generation per year in Dailing, Heilongjiang. It begin to overwinter on late September as 3rd instar larvae between needles. These overwintered larvae resume to feed in May of the next year. Moths emerge on early July. Female lay eggs on the surface of needle in arrangement. One female usually oviposit 6-18 eggs. Adult longevity is 8 days for male and 11 days for female respectively. Eggs hatch in 9-11 days. Hatched

larvae bore into needles. On September, 3rd instar larvae begin to overwinter.

In Jiagedaqi, Daxinganling, Heilongjiang, most damages can be observed from late June. In early stage, the larvae tied several needles to make a shelter and feed within it. These larval activities cause dropping of the needles and withering of the twigs. Mature larvae pupate in their feeding site from early July and adults began to emerge after 7-10 days from the pupation. Most adults were found on mid-July in this study.

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